

ABSTRACT OF THE DISCLOSURE

[097] A mirror having low density, low CTE, high thermal conductivity, high elastic modulus, and a reflective, polishable surface. The instant mirror features a silicon-based metal coating as the reflective surface, and a composite body as a support or substrate for the reflecting surface. The composite body features carbon fibers reinforcing a matrix containing silicon metal and optionally some silicon carbide. The metal coating can be elemental silicon metal, possibly in amorphous form, and can be applied by a vapor deposition process such as chemical vapor deposition (e.g., plasma enhanced CVD) or physical vapor deposition such as evaporation or electron beam PVD.